

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently Amended) An electron beam recorder comprising:

an electron optical system for irradiating an electron beam on ~~a master~~
~~of an~~ information recording medium; and

an electron beam irradiation position detecting unit for detecting an
irradiation position of the electron beam in the electron optical system while the
electron beam is being irradiated on the information recording medium~~master~~ by the
electron optical system;

wherein the electron beam irradiation position detecting unit includes:

at least one shielding plate for shielding the electron beam,
which has an edge brought substantially into contact with the electron
beam in a horizontal feed direction of the information recording
medium; and

an electron beam detector for detecting a quantity of the electron
beam shielded by the shielding plate.
2. (Currently Amended) The electron beam recorder as claimed in Claim 1,
wherein the electron beam irradiation position detecting unit is provided, in the
electron optical system, at a location closest to the information recording
medium~~master~~.
3. (Cancelled)
4. (Withdrawn) The electron beam recorder as claimed in Claim 1, wherein the
electron beam irradiation position detecting unit comprises:

a shielding plate for shielding the electron beam, which has a hole for shaping the electron beam to a desired beam diameter and is divided, at the hole, into first and second regions in a direction substantially perpendicular to a horizontal feed direction of the master; and

first and second electron beam detectors for detecting, as first and second detection signals, quantities of the electron beam shielded by the first and second regions of the shielding plate, respectively such that a difference signal of the first and second detection signals is obtained.

5. (Withdrawn) The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit includes at least one magnetic field sensor for detecting an intensity of magnetic field generated about a central axis located at an optical axis of the electron beam in the electron optical system.

6. (Withdrawn) The electron beam recorder as claimed in Claim 1, wherein the electron beam irradiation position detecting unit comprises:

at least one shielding plate for shielding the electron beam, which has an edge brought substantially into contact with the electron beam in a horizontal feed direction of the master and is coated with a luminescent layer for emitting light upon irradiation of the electron beam thereon; and

a photosensor for detecting an intensity of the light emitted by the luminescent layer, which is disposed so as to be directed towards the luminescent layer.

7. (Withdrawn) The electron beam recorder as claimed in Claim 1, further comprising:

an aperture which has at least two holes for bifurcating the electron beam into a main electron beam portion and a branch electron beam portion,

respectively such that a position of the branch electron beam portion is detected by the electron beam irradiation position detecting unit.

8. (Currently Amended) The electron beam recorder as claimed in Claim 1, further comprising:

an electron beam deflecting member for deflecting the electron beam in a horizontal feed direction of the information recording medium~~master~~, which is provided in the electron optical system; and

a control device for controlling the electron beam deflecting member in accordance with a detection result of the electron beam irradiation position detecting unit so as to change an irradiation direction of the electron beam.

9. (Currently Amended) A method of detecting, in an electron beam recorder for recording signals on a ~~master of an~~ information recording medium by an electron beam, an irradiation position of the electron beam, comprising the steps of:

irradiating the electron beam on the information recording medium~~master~~ so as to record information on the information recording medium~~master~~;

shielding the irradiated electron beam with at least one shielding plate which has an edge brought substantially into contact with the electron beam in a horizontal feed direction of the information recording medium;

detecting a quantity of the shielded electron beam shielded by the shielding plate; and

detecting a position of the electron beam on the basis of the detected quantity of the electron beam.

10. (Original) The method as claimed in Claim 9, wherein an irradiation direction of the electron beam is changed on the basis of the detected quantity of the electron beam.

Application No.: 10/784,391
Amendment Dated: June 12, 2007
Reply to Office Action of: March 14, 2007

AOY-3972US

11. (Withdrawn) The method as claimed in Claim 9, wherein a shielding plate is divided into first and second regions and quantities of the electron beam shielded by the first and second regions of the shielding plate are, respectively, detected as first and second detection signals such that the position of the electron beam is detected by a difference signal of the first and second detection signals.

12. (Withdrawn) The method as claimed in Claim 9, wherein a quantity of the electron beam shielded by a shielding plate coated with a luminescent layer for emitting light upon irradiation of the electron beam thereon is detected.

13. (Cancelled)